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**R307. Environmental Quality, Air Quality.**

**R307-342. Adhesives and Sealants.**

**R307-342-1. Purpose.**

The purpose of this rule is to limit emissions of volatile organic compounds (VOCs) from adhesives, sealants, primers and cleaning solvents.

**R307-342-2. Applicability.**

Beginning September 1, 2014, R307-342 applies to any person who manufactures any adhesive, sealant, adhesive primer or sealant primer in Box Elder, Cache, Davis, Salt Lake, Utah or Weber counties and to any person who sells, supplies, or applies any adhesive, sealant, adhesive primer or sealant primer in Box Elder, Cache, Davis, Salt Lake, Tooele, Utah or Weber counties manufactured on or after September 1, 2014.

**R307-342-3. Exemptions.**

(1) The requirements of R307-342 do not apply to the following:

(a) Adhesives, sealants, adhesive primers or sealant primers being tested or evaluated in any research and development, quality assurance or analytical laboratory;

(b) Adhesives and sealants that contain less than 20 grams of VOC per liter of adhesive or sealant, less water and exempt solvents, as applied;

(c) Cyanoacrylate adhesives;

(d) Adhesives, sealants, adhesive primers or sealant primers that are sold or supplied by the manufacturer or supplier in containers with a net volume of 16 fluid ounces or less or that have a net weight of one pound or less, except plastic cement welding adhesives and contact adhesives;

(e) Contact adhesives that are sold or supplied by the manufacturer or supplier in containers with a net volume of one gallon or less;

(f) Aerosol adhesives and primers dispensed from aerosol spray cans; or

(g) Polyester bonding putties to assemble fiberglass parts at fiberglass boat manufacturing facilities and at other reinforced plastic composite manufacturing facilities.

(2) The requirements of R307-342 do not apply to the use of adhesives, sealants, adhesive primers, sealant primers, surface preparation and cleanup solvents in the following operations:

(a) Tire repair operations, provided the label of the adhesive states "for tire repair only;"

(b) In the production, rework, repair, or maintenance of aerospace vehicles and components, and undersea-based weapon systems;

(c) In the manufacture of medical equipment;

(d) Operations that are exclusively covered by Department of Defense military technical specifications and standards and performed by a Department of Defense contractor and/or on site at installations owned and/or operated by the United States Armed Forces.

(e) Plaque laminating operations in which adhesives are used to bond clear, polyester acetate laminate to wood with lamination equipment installed prior to July 1, 1992.

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(3) The requirements of R307-342 do not apply to commercial and industrial operations if the total VOC emissions from all adhesives, sealants, adhesive primers and sealant primers used at the source are less than 200 pounds per calendar year.

(4) Adhesive products and sealant products shipped, supplied or sold exclusively outside of the areas specified in R307-342-2 are exempt from the requirements of this rule.

(5) R307-342 shall not apply to any adhesive, sealant, adhesive primer or sealant primer products manufactured for shipment and use outside of the counties specified R307-342-2 as long as the manufacturer or distributor can demonstrate both that the product is intended for shipment and use outside of the applicable counties and that the manufacturer or distributor has taken reasonable prudent precautions to assure that the product is not distributed to the applicable counties.

(6) R307-342 shall not apply to the use of any adhesives, sealants, adhesive primers, sealant primers, cleanup solvents and surface preparation solvents, provided the total volume of noncomplying adhesives, sealants, primers, cleanup and surface preparation solvents applied facility-wide does not exceed 55 gallons per rolling 12-month period.

(7) Commercial and industrial operations claiming exemption pursuant to R307-342-3 shall record and maintain operational records sufficient to demonstrate compliance.

#### **R307-342-4. Definitions.**

The following additional definitions apply to R307-342:

"Acrylonitrile-butadiene-styrene (ABS) welding adhesive" means any adhesive intended by the manufacturer to weld acrylonitrile-butadiene-styrene pipe, which is made by reacting monomers of acrylonitrile, butadiene and styrene.

"Adhesive" means any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.

"Adhesive primer" means any product intended by the manufacturer for application to a substrate, prior to the application of an adhesive, to provide a bonding surface.

"Aerospace component" means a fabricated part, assembled part, or completed unit, including passenger safety equipment, of any aircraft, helicopter, missile or space vehicle.

"Architectural sealant or primer" means any sealant or sealant primer intended by the manufacturer to be applied to stationary structures, including mobile homes and their appurtenances. Appurtenances to an architectural structure include, but are not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain gutters and downspouts, and windows.

"Automotive glass adhesive primer" means an adhesive primer labeled by the manufacturer to be applied to automotive glass prior to installation of the glass using an adhesive or sealant.

"Ceramic tile installation adhesive" means any adhesive intended by the manufacturer for use in the installation of ceramic tiles.

"Chlorinated polyvinyl chloride plastic (CPVC) plastic" means a polymer of the vinyl chloride monomer that contains 67% chlorine

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and is typically identified with a CPVC marking.

"Chlorinated polyvinyl chloride (CPVC) welding adhesive" means an adhesive labeled for welding of chlorinated polyvinyl chloride plastic.

"Cleanup solvent" means a VOC-containing material used either to remove a loosely held uncured (i.e., not dry to the touch) adhesive or sealant from a substrate or to clean equipment used in applying a material.

"Computer diskette jacket manufacturing adhesive" means any adhesive intended by the manufacturer to glue the fold-over flaps to the body of a vinyl computer diskette jacket.

"Contact bond adhesive" means an adhesive that:

(1) is designed for application to both surfaces to be bonded together;

(2) is allowed to dry before the two surfaces are placed in contact with each other;

(3) forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other; and

(4) does not need sustained pressure or clamping of surfaces after the adhesive-coated surfaces have been brought together using sufficient momentary pressure to establish full contact between both surfaces.

"Contact adhesive" means an adhesive that feels dry to the touch and bonds instantly. Contact adhesives do not include rubber cements that are primarily intended for use on paper substrates and vulcanizing fluids that are designed and labeled for tire repair only.

"Cove base" means a flooring trim unit, generally made of vinyl or rubber, having a concave radius on one edge and a convex radius on the opposite edge that is used in forming a junction between the bottom wall course and the floor or to form an inside corner.

"Cove base installation adhesive" means any adhesive intended by the manufacturer to be used for the installation of cove base or wall base on a wall or vertical surface at floor level.

"Cyanoacrylate adhesive" means any adhesive with a cyanoacrylate content of at least 95% by weight.

"Department of Defense military technical data" means a specification that specifies design requirements, such as materials to be used, how a requirement is to be achieved, or how an item is to be fabricated or constructed.

"Enclosed cleaning system" means a cleaner consisting of a closed container with a door or top that can be opened and closed and fitted with cleaning connections. A spray gun is attached to the enclosed cleaning system by a connection, and solvent is pumped through the gun to clean it. The cleaning solvent falls back into the cleaning system's solvent reservoir for recirculation.

"Flexible vinyl" means non-rigid polyvinyl chloride plastic with at least 5% by weight plasticizer content.

"Fiberglass" means a material consisting of extremely fine glass fibers.

"Indoor floor covering installation adhesive" means any adhesive intended by the manufacturer for use in the installation of wood flooring, carpet, resilient tile, vinyl tile, vinyl backed carpet,

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resilient sheet and roll or artificial grass. Adhesives used to install ceramic tile and perimeter bonded sheet flooring with vinyl backing onto a non-porous substrate, such as flexible vinyl, are excluded from this category.

"Laminate" means a product made by bonding together two or more layers of material.

"Marine deck sealant" or "marine deck sealant primer" means any sealant or sealant primer labeled for application to wooden marine decks.

"Medical equipment manufacturing" means the manufacture of medical devices, such as, but not limited to, catheters, heart valves, blood cardioplegia machines, tracheostomy tubes, blood oxygenators, and cardiatory reservoirs.

"Metal to urethane/rubber molding or casting adhesive" means any adhesive intended by the manufacturer to bond metal to high density or elastomeric urethane or molded rubber materials, in heater molding or casting processes, to fabricate products such as rollers for computer printers or other paper handling equipment.

"Multipurpose construction adhesive" means any adhesive intended by the manufacturer for use in the installation or repair of various construction materials, including but not limited to drywall, subfloor, panel, fiberglass reinforced plastic (FRP), ceiling tile and acoustical tile.

"Nonmembrane roof installation/repair adhesive" means any adhesive intended by the manufacturer for use in the installation or repair of nonmembrane roofs and that is not intended for the installation of prefabricated single-ply flexible roofing membrane, including, but not limited to, plastic or asphalt roof cement, asphalt roof coating and cold application cement.

"Outdoor floor covering installation adhesive" means any adhesive intended by the manufacturer for use in the installation of floor covering that is not in an enclosure and that is exposed to ambient weather conditions during normal use.

"Panel installation" means the installation of plywood, pre-decorated hardboard (or tileboard), fiberglass reinforced plastic, and similar pre-decorated or non-decorated panels to studs or solid surfaces using an adhesive formulated for that purpose.

"Perimeter bonded sheet flooring installation" means the installation of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive designed to be applied only to a strip of up to four inches wide around the perimeter of the sheet flooring.

"Plastic cement welding adhesive" means any adhesive intended by the manufacturer for use to dissolve the surface of plastic to form a bond between mating surfaces.

"Plastic cement welding adhesive primer" means any primer intended by the manufacturer for use to prepare plastic substrates prior to bonding or welding.

"Plasticizer" means a material such as a high boiling point organic solvent that is incorporated into a vinyl to increase its flexibility, workability, or distensibility, as determined by ASTM Method E-260-96.

"Polyvinyl chloride (PVC) plastic" means a polymer of the chlorinated vinyl monomer that contains 57% chlorine.

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"Polyvinyl chloride welding adhesive" or "PVC welding adhesive" means any adhesive intended by the manufacturer for use in the welding of PVC plastic pipe.

"Porous material" means a substance that has tiny openings, often microscopic, in which fluids may be absorbed or discharged, including, but not limited to, wood, paper and corrugated paperboard.

"Roadway sealant" means any sealant intended by the manufacturer for application to public streets, highways and other surfaces, including but not limited to curbs, berms, driveways and parking lots.

"Rubber" means any natural or manmade rubber substrate, including styrene-butadiene rubber, polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene and ethylene propylene diene terpolymer.

"Sealant primer" means any product intended by the manufacturer for application to a substrate, prior to the application of a sealant, to enhance the bonding surface.

"Sealant" means any material with adhesive properties, including sealant primers and caulks, that is formulated primarily to fill, seal, waterproof or weatherproof gaps or joints between two surfaces.

"Sheet-applied rubber installation" means the process of applying sheet rubber liners by hand to metal or plastic substrates to protect the underlying substrate from corrosion or abrasion. These operations also include laminating sheet rubber to fabric by hand.

"Single-ply roof membrane" means a prefabricated single sheet of rubber, normally ethylene-propylenediene terpolymer, that is field applied to a building roof using one layer of membrane material.

"Single-ply roof membrane installation and repair adhesive" means any adhesive labeled for use in the installation or repair of single-ply roof membrane.

(1) Installation includes, as a minimum, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes and ducts that protrude through the membrane.

(2) Repair includes gluing the edges of torn membrane together, attaching a patch over a hole and reapplying flashings to vents, pipes or ducts installed through the membrane.

"Single-ply roof membrane adhesive primer" means any primer labeled for use to clean and promote adhesion of the single-ply roof membrane seams or splices prior to bonding.

"Single-ply roof membrane sealant" means any sealant labeled for application to single-ply roof membrane.

"Structural glazing adhesive" means any adhesive intended by the manufacturer to apply glass, ceramic, metal, stone or composite panels to exterior building frames.

"Subfloor installation" means the installation of subflooring material over floor joists, including the construction of any load bearing joists. Subflooring is covered by a finish surface material.

"Surface preparation solvent" means a solvent used to remove dirt, oil and other contaminants from a substrate prior to the application of a primer, adhesive or sealant.

"Thin metal laminating adhesive" means any adhesive intended by the manufacturer for use in bonding multiple layers of metal to metal or metal to plastic in the production of electronic or magnetic components in which the thickness of the bond line is less than 0.25

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"Tire repair" means a process that includes expanding a hole, tear, fissure or blemish in a tire casing by grinding or gouging, applying adhesive, and filling the hole or crevice with rubber.

"Traffic marking tape" means preformed reflective film intended by the manufacturer for application to public streets, highways and other surfaces, including curbs, berms, driveways and parking lots.

"Traffic marking tape adhesive primer" means any primer intended by the manufacturer for application to surfaces prior to installation of traffic marking tape.

"Undersea-based weapons systems components" means the fabrication of parts, assembly of parts or completed units of any portion of a missile launching system used on undersea ships.

"Waterproof resorcinol glue" means a two-part resorcinol-resin-based adhesive designed for applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

**R307-342-5. ~~[Emission Standards]~~VOC Content Limits.**

(1) Beginning September 1, 2014, no person shall manufacturer any adhesive, sealant, adhesive primer or sealant primer with a VOC content in excess of the limits in Table 1.

(2) Beginning September 1, 2014, no person shall sell supply or offer for sale any adhesive, sealant, adhesive primer or sealant primer with a VOC content in excess of the limits in Table 1 and that was manufactured on or after September 1, 2014.

(3) Beginning September 1, 2014, no person shall apply any adhesive, sealant, adhesive primer or sealant primer with a VOC content in excess of the limits in Table 1 unless that person uses an add-on control device as specified in R307-342-8 or unless the adhesive, sealant, adhesive primer or sealant primer was manufactured before September 1, 2014.

(4) The VOC content limits in Table 1 for adhesives applied to particular substrates shall apply as follows:

(a) If a person uses an adhesive or sealant subject to a specific VOC content limit for such adhesive or sealant in Table 1, such specific limit is applicable rather than an adhesive-to-substrate limit; and

(b) If an adhesive is used to bond dissimilar substrates together, the applicable substrate category with the highest VOC content shall be the limit for such use.

TABLE 1

VOC Content Limits for Adhesives, Sealants, Adhesive Primers, Sealant Primers and Adhesives Applied to Particular Substrates (minus water and exempt compounds (compounds that are not defined as VOC), as applied

Adhesive, Sealant, Adhesive Primer Category	VOC Content Limit (grams VOC/liter)
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Adhesives

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ABS welding	400
Ceramic tile installation	130
Computer diskette jacket manufacturing	850
Contact bond	250
Cove base installation	150
CPVC welding	490
Indoor floor covering installation	150
Metal to urethane/rubber molding or casting	850
Multipurpose construction	200
Nonmembrane roof installation/repair	300
Other plastic cement welding	510
Outdoor floor covering installation	250
PVC welding	510
Single-ply roof membrane installation/repair	250
Structural glazing	100
Thin metal laminating	780
Tire retread	100
Perimeter bonded sheet vinyl flooring installation	660
Waterproof resorcinol glue	170
Sheet-applied rubber installation	850
Sealants	
Architectural	250
Marine deck	760

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Nonmembrane roof installation/repair	300
Roadway	250
Single-ply roof membrane	450
Other	420
Adhesive Primers	
Automotive glass	700
Plastic cement welding	650
Single-ply roof membrane	250
Traffic marking tape	150
Other	250
Sealant Primers	
Non-porous architectural	250
Porous architectural	775
Marine deck	760
Other	750
Adhesives Applied to the Listed Substrate	
Flexible vinyl	250
Fiberglass	200
Metal	30
Porous material	120
Rubber	250
Other substrates	250

**R307-342-6. Application Equipment.**

(1) An operator shall only use the following equipment to apply adhesives and sealants:

- (a) Electrostatic application;
- (b) Flow coater;
- (c) Roll coater;
- (d) Dip coater;
- (e) Hand application method;



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- (f) Airless spray and air-assisted airless spray;
  - (g) High volume, low pressure spray equipment operated in accordance with the manufacturers specifications; or
  - (h) Other methods having a minimum 65% transfer efficiency.
- (2) Removal of an adhesive, sealant, adhesive primer or sealant primer from the parts of spray application equipment shall be performed as follows:
- (a) In an enclosed cleaning system;
  - (b) Using a solvent with a VOC content less than or equal to 70 grams of VOC per liter of material; or
  - (c) Parts containing dried adhesive may be soaked in a solvent if the composite vapor pressure of the solvent, excluding water and exempt compounds, is less than or equal to 9.5 mm Hg at 20 degrees Celsius and the parts and solvent are in a closed container that remains closed except when adding parts to or removing parts from the container.

**R307-342-7. Administrative Requirements.**

- (1) Each person that manufactures adhesives, sealants, and adhesive primers subject to this rule shall maintain records demonstrating compliance.
- (2) Commercial and industrial operations that are not exempt under R307-342-3 shall maintain records demonstrating compliance with this rule, including:
- (a) A list of each adhesive, sealant, adhesive primer, sealant primer cleanup solvent and surface preparation solvent in use and in storage;
  - (b) A material data sheet for each adhesive, sealant, adhesive primer, sealant primer, cleanup solvent and surface preparation solvent;
  - (c) A list of catalysts, reducers or other components used and the mix ratio;
  - (d) The VOC content or vapor pressure, as applied; and
  - (e) The monthly volume of each adhesive, sealant, adhesive primer, sealant primer cleanup solvent and surface preparation solvent used.
- (2) Except as provided in R307-342-6(2), no person shall use materials containing VOCs for the removal of adhesives, sealants, or adhesive or sealant primers from surfaces, other than spray application equipment, unless the composite vapor pressure of the solvent used is less than 45 mm Hg at 20 degrees Celsius.

**R307-342-8. ~~[Optional]~~ Add-On Control[s] Systems Operations.**

- ~~[(1) VOC emissions from the manufacturer or use of all adhesives, sealants, adhesive primers or sealant primers subject to this rule shall be reduced by an overall capture and control efficiency of at least 85% by weight.~~
- ~~(2) The owner or operator of an emission control system shall provide documentation that the emissions control system will attain the requirements of R307-342-8.~~
- ~~(3) The owner or operator of an emission control system shall maintain for a minimum of two years records of operating and maintenance sufficient to demonstrate that the equipment is being~~

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~~operated and maintained in accordance with the manufacturer recommendations.]~~

(1) The owner or operator shall install and maintain an incinerator, carbon adsorption, or any other add-on emission control system, provided that the emission control system is operated and maintained in accordance with the manufacturer recommendations in order to maintain at least 85% capture and control efficiency. Determination of overall capture and control efficiency shall be determined using EPA approved methods, as follows.

(a) The capture efficiency of a VOC emission control system's VOC collection device shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR Part 51, Appendix M, Methods 204-204F, as applicable.

(b) The control efficiency of a VOC emission control system's VOC control device shall be determined using test methods in Appendices A-1, A-6, and A-7 to 40 CFR Part 60, for measuring flow rates, total gaseous organic concentrations, or emissions of exempt compounds, as applicable.

(c) An alternative test method may be substituted for the preceding test methods after review and approval by the EPA Administrator.

(2) The owner or operator of a control system shall provide documentation that the emission control system will attain the requirements of R307-342-8(1).

(3) The owner or operator shall maintain records of key system parameters necessary to ensure compliance with R307-342-8. Key system parameters may include, but are not limited to, temperature, pressure and flow rates. Operator inspection schedule, monitoring, recordkeeping, and key parameters shall be in accordance with the manufacturer's recommendations, and as required to demonstrate operations are providing continuous emission reduction from the source during all periods that the operations cause emissions from the source.

(4) The owner or operator shall maintain for a minimum of two years records of operating and maintenance sufficient to demonstrate that the equipment is being operated and maintained in accordance with the manufacturer recommendations.

### **R307-342-9. Container Labeling.**

Each manufacturer of an adhesive, sealant, adhesive primer or sealant primer subject to this rule shall display the following information on the product container or label:

(1) A statement of the manufacture's recommendation regarding thinning, reducing, or mixing of the product.

(a) R307-342-9 does not apply to the thinning of a product with water.

(b) If the thinning of the product prior to use is not necessary, the recommendation shall specify that the product is to be applied without thinning.

(2) The maximum or the actual VOC content of the product in accordance with Table 1, as supplied, displayed in grams of VOC per liter of product; and

(3) The maximum or the actual VOC content of the product in

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accordance with Table 1, which includes the manufacture's maximum recommendation for thinning, as applied, displayed in grams of VOC per liter of product.

**KEY: air pollution, adhesives, sealants, primers**

**Date of Enactment or Last Substantive Amendment: ~~[August 1, 2013]~~ 2014**

**Authorizing, and Implemented or Interpreted Law: 19-2-104(1)(a)**